

WHAT IS CLAIMED IS:

1. A light emitting diode comprising:

a surface mount package;

a metal lead frame having mass sufficient to provide low thermal resistance and including at least one anode contact pad and at least one cathode contact pad;

a reflector positioned within the package; and,

a semiconductor die comprising a transparent substrate and a light emitting component, the semiconductor die positioned within the package between an anode contact and a cathode contact over the reflector.

2. The light emitting diode of claim 1 further comprising a focusing dome operative to refract light emitted from the semiconductor die and light reflected from the reflector to create a predetermined radiation pattern.

3. The light emitting diode of claim 2 wherein the radiation pattern comprises a 120 degree illumination pattern.

4. The light emitting diode of claim 1 wherein the reflector comprises a truncated cone shape.

5. The light emitting diode of claim 1 wherein the lead frame comprises three anode contact pads and one cathode contact pad.

6. The light emitting diode of claim 1 wherein the lead frame comprises a lead frame having a thermal resistance less than 300 K°/W.

7. The light emitting diode of claim 1 wherein the lead frame comprises copper.

8. The light emitting diode of claim 1 wherein the lead frame comprises silver-plated copper.

9. The light emitting diode of claim 1 wherein the light emitting component comprises a GaN-based compound semiconductor and the substrate comprises sapphire.

10. The light emitting diode of claim 1 wherein the light emitting component comprises an AlInGaP compound semiconductor and the substrate comprises GaP.

11. The light emitting diode of claim 1 wherein the light emitting component and the substrate are arranged side-by-side over the reflector.

12. The light emitting diode of claim 1 wherein the substrate is positioned on top of the light emitting component over the reflector.